UNITED STATES PATENT AND TRADEMARK OFFICE

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10/525,634	02/24/2005	Tetsujiro Kondo	450100-04715	2139

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EXAMINER
NEGRON, WANDA M

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 February 2005*.
2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) *1-20* is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on *24 February 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☒ All   b)☐ Some * c)☐ None of:
      1.☒ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which

papers have been placed of record in the file.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

Claim 1 in line 4, claim 16 in lines 4-5, claim 17 in lines 5-6, claim 18 in lines 6-7,

and claim 19 in lines 4-5 respectively recite "from a movement detected by the inputted

image signal". It is unclear how an image signal detects movement. For examining

purposes, claim 1 and 16-19 will be interpreted as reciting "from a movement detected

in the inputted image signal" for the remainder of this Office action.

Claim 2 recites "wherein the inputted image signal is composed of an image

signal for a frame unit". The meaning of the phrase "an image signal for a frame unit" is

unclear. For examining purposes, claim 2 will be interpreted as reciting "wherein the

inputted image signal is composed of frame units" for the remainder of this Office action.

Claim 5 recites the limitation "the number of movement vectors" in line 3. There

is insufficient antecedent basis for this limitation in the claim.

In addition, claim 5 recites "deciding the number of movement vectors for each of the directions of the movement vectors" in lines 3-4. It is unclear what the phrase "each of the directions of the movement vectors" means. For examining purposes, claim 5 will be interpreted as reciting "deciding a number of movement vectors" for the remainder of this Office action.

Claim 7 recites the limitation "the movement of the past" in line 3. There is insufficient antecedent basis for this limitation in the claim. In addition, the meaning of the phrase "the movement of the past" is unclear. For examining purposes, claim 7 will be interpreted as reciting "a previously determined movement" for the remainder of this Office action. For clarification purposes, it is also suggested to replace the term "the determined movement" in line 4 with the term "a currently determined movement".

Claim 8 recites the meaning of the limitation "the past movement is a lastly detected movement of the movement", which is unclear. For examining purposes, claim 8 will be interpreted as reciting "said previously determined movement is a movement determined immediately prior to said currently detected movement" for the remainder of this Office action.

Claim 9 recites the limitation "the movement" in lines 2 and 5, which is unclear. For examining purposes, claim 9 will be interpreted as reciting "said currently determined movement" for the remainder of this Office action. In addition, it is unclear how "the output of the second memory has no movement", as recited in lines 2-3, when parent claim 7 discloses that the second memory stores a previously determined movement. It is also unclear how the movement of the second memory is different from

the currently determined movement since a movement can be different regarding

amount, direction, in relation to a threshold, in relation to a camera operation, etc.

Claim 11 recites the limitation "the threshold value" in line 3. There is insufficient

antecedent basis for this limitation in the claim. In addition, the meaning of the limitation

"when the threshold value or more of the movement vectors are located in the horizontal

direction or in the vertical direction" is unclear. For examining purposes, claim 11 will be

interpreted as reciting "when a movement in the horizontal direction or in the vertical

direction is equal to or more than a threshold value" for the remainder of this Office

action.

Claim 20 recites the limitation "the extracted image signals" in line 3. There is

insufficient antecedent basis for this limitation in the claim. More specifically, parent

claim 19 discloses displaying "the extracted image signal" instead of "the extracted

image signals". In addition, the meaning of the limitation "controls an image signal

displayed on each of the display devices among the extracted image signals in

accordance with the arrangement of the plurality of display devices" is unclear. For

examining purposes, claim 20 will be interpreted as reciting "controls an image signal

displayed on each of the display devices" for the remainder of this Office action.

Any claim depending on a claim addressed above, is also being rejected as

incorporating the deficiencies of the claim upon which it depends.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

The USPTO "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" (Official Gazette notice of 22 November 2005), Annex IV, reads as follows:

> Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." In this context, "functional descriptive material" consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific data manipulation functions." The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) "Nonfunctional descriptive material" includes but is not limited to music, literary works and a compilation or mere arrangement of data.

> When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994) (claim to data structure stored on a computer readable medium that increases computer efficiency held statutory) and Warmerdam, 33 F.3d at 1360-61, 31 USPQ2d at 1759 (claim to computer having a specific data structure stored in memory held statutory product-by-process claim) with Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

> In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. See Lowry, 32 F.3d at 1583-84, 32 USPQ2d at 1035.

Claim 17 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter as follows. Claim 17 defines a "program for performing a prescribed process by a computer" embodying functional descriptive material. However, the claim does not define a computer-readable medium or memory and is thus non-statutory for that reason (i.e., "When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized" – Guidelines Annex IV). That is, the scope of the presently claimed "program for performing a prescribed

process by a computer" can range from paper on which the program is written, to a

program simply contemplated and memorized by a person.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**<u>Claims 1-3 and 16-18 are rejected under 35 U.S.C. 102(b) as being
anticipated by Gotoh et al. (US Patent No. 5,809,202), hereinafter referred to as
Gotoh.</u>**

Regarding **claim 1**, Gotoh teaches an image signal processor comprising: an

input means for inputting an image signal (*i.e.*, moving image recording medium 303); a

camera operation estimating means for estimating a start time and/or a completion time

of a camera operation from a movement detected in the inputted image signal (*i.e.*, the

system comprising a motion vector detecting section 304, a camera operation assuming

section 305 and a shot breakpoint detecting section 307; see also col. 23, lines 19-28

and lines 39-47) and extracting the image signal at the estimated start time and/or the

estimated completion time of the camera operation (see col. 23, lines 60-65); and an

output means for outputting the extracted image signal (*i.e.*, output section 309; see col.

23, lines 60-65).

Regarding **claim 2**, Gotoh teaches that the inputted image signal is composed of frame units (see col. 23, lines 19-22).

Regarding **claim 3**, Gotoh teaches a first memory for storing the inputted image signal (*i.e.,* moving image recording medium 303), wherein the camera operation estimating means extracts the image signal at the estimated start time and/or the estimated completion time of the camera operation from the first memory (see figure 18).

Method claim 16 is drawn to the method of using the corresponding apparatus claimed in claim 1. Therefore method claim 16 corresponds to apparatus claim 1 and is rejected for the same reasons of anticipation (obviousness) as used above.

Claims 17 and 18 are drawn to a computer program and a computer program recorded in a recording medium capable of being read by a computer corresponding to the method claimed in claim 16. Therefore claims 17 and 18 correspond to method claim 16 and are rejected for the same reasons of anticipation (obviousness) as used above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set
forth in section 102 of this title, if the differences between the subject matter sought to be patented and
the prior art are such that the subject matter as a whole would have been obvious at the time the
invention was made to a person having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the invention was made.

Claims 4, 6-15, 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gotoh.

Regarding **claim 4**, as mentioned in the discussion of claim 1 above, Gotoh discloses all the limitations of the parent claim. Gotoh also teaches that the camera operation estimating means further includes a movement detecting means for detecting the movement of the inputted image signal (*i.e.*, a motion vector detecting section 304). In addition, Gotoh discloses that the movement is determined on the basis of the movement vectors of corresponding local portions between frames of the inputted image signal (see col. 23, lines 19-22). Gotoh, however, does not explicitly disclose that said local portions of the inputted image signal correspond to pixels of the inputted image signal.

Official notice is taken that the concept of determining movement vectors relating to the whole image or portions of an image including pixels is old and well known in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to try to determine movement on the basis of the movement vectors of pixels of the inputted image signal since a person with ordinary skill has good reason to pursue the known options within his or her technical grasp if this leads to an anticipated result.

Regarding **claim 6**, although Gotoh teaches that the movement is determined on the basis of the movement vectors for some frame units of the inputted image signal (see col. 25, lines 8-10), Gotoh does not explicitly teach that the movement is determined on the basis of the movement vectors of pixels *for each frame unit* of the inputted image signal.

Official notice is taken that the concept of determining movement on the basis of the movement vectors of pixels for each frame unit of the inputted image signal is old and well known in the art. It would have been obvious to one having ordinary skill in the art at the time the invention was made to try to determine movement on the basis of the movement vectors of pixels for each frame unit of the inputted image signal since a person with ordinary skill has good reason to pursue the known options within his or her technical grasp if this leads to an anticipated result.

Regarding **claim 7**, Gotoh teaches that the camera operation estimating means further includes a second memory for storing a previously determined movement (*i.e.*, camera operation recording medium 306 which stores a zooming factor f and a rotation vector P=(px,py) for a previously determined movement of the Rth frame; see col. 27, lines 16-46), and the start time and/or the completion time of the camera operation (*i.e.*, a shot break point) are decided on the basis of a currently determined movement (*i.e.*, zooming factor f and a rotation vector P of a determined movement of the (R+r)th frame) and the output of the second memory (see col. 27, lines 38-67).

Regarding **claim 8**, Gotoh teaches that said previously determined movement is a movement determined immediately prior to said currently detected movement (*i.e.*, the detected movement in the Rth frame is the last movement determined immediately prior to the detected movement in the (R+r)th frame since the camera operations are recorded at every r frames; see col. 27, lines 38-46).

Regarding **claim 10**, Gotoh teaches that the movement indicates a direction in which the camera operation moves (see col. 23, lines 19-28).

Regarding **claim 11**, Gotoh teaches that the camera operation indicates a panning operation in a horizontal direction or a tilting operation in a vertical direction (see col. 25, lines 14-24 and lines 64-67), and when a movement in the horizontal direction or in the vertical direction is equal to or more than a threshold value, the camera operation estimating means estimates them to be the panning operation or the tilting operation, respectively (see figures 24B and 24C).

Regarding **claim 12**, Gotoh teaches that the camera operation is a zooming operation (see col. 25, lines 48-60). It would be inherent that, if the movement vectors are radial, a zooming operation takes place.

Regarding **claim 13**, Gotoh teaches that the output means outputs the inputted image signal together with the extracted image signal (*i.e.*, the image corresponding to

a shot breakpoint is outputted together with "images of a prescribed number of frames";

see col. 23, lines 60-65, col. 28, lines 36-39, and figure 24E).

Regarding **claim 14**, Gotoh teaches a synthesizing means for synthesizing the

extracted image signal with the inputted image signal (*i.e.*, a digest display control

section 308), wherein the output means outputs a synthesized image synthesized by

the synthesizing means (see figure 18).

Regarding **claim 15**, Gotoh teaches a display means for displaying the

synthesized image (see col. 29, lines 9-13).

Claim 19 has limitations similar to those treated in the above rejection of claim 1,

and are met by the references as discussed above. Claim 19 however also recites the

following limitations: an image signal processing system comprising a plurality of display

devices for displaying the inputted image signal and the extracted image signal. Gotoh

discloses displaying (see col. 29, lines 9-13) the inputted image signal and the extracted

image signal (*i.e.*, the image corresponding to a shot breakpoint is outputted together

with "images of a prescribed number of frames"; see col. 23, lines 60-65, col. 28, lines

36-39, and figure 24E). Gotoh, however, does not disclose displaying the inputted

image signal and the extracted image signal in a plurality of display devices.

Official notice is taken that the concept of displaying an image in multiple

displays is well known in the art. It would have been obvious to one having ordinary

skill in the art at the time the invention was made to try to display the inputted image

signal and the extracted image signal in a plurality of display devices since a person

with ordinary skill has good reason to pursue the known options within his or her

technical grasp if this leads to an anticipated result of displaying the inputted image

signal and the extracted image signal in multiple display devices instead of one display

device.

Regarding **claim 20**, Official notice is taken that the concept of having an image

signal processor controlling an image signal displayed on each of a plurality of display

devices is well known in the art. It would have been obvious to one having ordinary skill

in the art at the time the invention was made to try to use an image signal processor for

controlling an image signal displayed on each of a plurality of display devices in

accordance with the arrangement of the plurality of display devices since a person with

ordinary skill has good reason to pursue the known options within his or her technical

grasp if this leads to an anticipated result of controlling an image signal displayed on

each of a plurality of display devices.

Claims 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable

over Gotoh, and further in view of Miyatake et al. (US Patent No. 5,267,034),

hereinafter referred to as Miyatake.

Regarding **claim 5**, as mentioned in the discussion of claims 1-4 above, Gotoh

teaches all the limitations of the parent claim. Gotoh, however, does not explicitly

disclose that the camera operation estimating means further includes a movement

vector number deciding means for deciding a number of movement vectors to

determine the movement on the basis of the output of the movement vector number

deciding means.

Miyatake, on the other hand, discloses deciding a number of movement vectors

to determine a camera movement on the basis of said number of movement vectors

(*i.e.*, motion vectors in a range are found and an average of said motion vectors is

calculated in order to determine a "camera work"; see col. 9, lines 53 *et seq.*).

Therefore, it would have been obvious to one having ordinary skill in the art at

the time the invention was made to try to determine a movement on the basis of a

number of movement vectors since a person with ordinary skill has good reason to

pursue the known options within his or her technical grasp if this leads to an anticipated

result, *e.g.*, determining a camera operation movement or camera work. Furthermore, it

would have been an obvious matter of design choice to determine a movement on the

basis of a number of movement vectors since the applicant has not disclosed that

determining a movement on the basis of a number of movement vectors solves any

stated problem or is for any particular purpose, and it appears that the invention would

perform equally well with the movement determination method of Gotoh comprising

detecting a movement on the basis of a zooming factor and a rotation vector based on

the values of all the motion vectors calculated for a frame.

Regarding **claim 9**, as mentioned in the discussion of claims 1-4 and 7 above,

Gotoh teaches all the limitations of the parent claim. In addition, Gotoh teaches that

when the output of the second memory is different from said currently determined

movement (*i.e.*, the previously detected movement is below a threshold while the

currently detected movement is equal to or above a threshold) and the output of the

second memory has no movement (*i.e.*, the previously detected movement is below a

threshold), the camera operation estimating means estimates it to be the start time of

the camera operation (see figures 24A-24E).   Gotoh, however, does not explicitly

disclose that when the output of the second memory is different from said currently

determined movement and the output of the second memory has a movement, the

camera operation estimating means estimates it to be the completion time of the

camera operation.

Miyatake, on the other hand, discloses setting a completion time of a camera

operation (*e.g.*, see figures 16 and 17) wherein a previously determined movement

exists (*i.e.*, the previously detected movement is equal to or above a threshold) in a

previous frame and is different from a currently detected movement (*i.e.*, the previously

detected movement is equal to or above a threshold while the currently detected

movement is below a threshold).

Therefore, it would have been obvious to one having ordinary skill in the art at

the time the invention was made to try to estimate a completion time of a camera

operation when the output of the second memory is different from said currently

determined movement and the output of the second memory has a movement since a

person with ordinary skill has good reason to pursue the known options within his or her

technical grasp if this leads to an anticipated result, *e.g.,* determining a completion time

of a camera operation.

Conclusion

The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

- Kondo et al. (US Patent No. 6,678,328) discloses an information processor

  wherein camera motion estimation information is detected on the basis of motion

  vector determination.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WANDA M. NEGRON whose telephone number is (571)270-1129. The examiner can normally be reached on Mon-Fri 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Wanda M. Negrón/
Examiner, Art Unit 2622
September 12, 2008

/Tuan V Ho/

Primary Examiner, Art Unit 2622